

**WHAT IS CLAIMED IS:**

- 1           1.     An apparatus configured to improve sound quality for a sound  
2 generator, comprising:  
3                 a processing device;  
4                 a memory coupled to the processing device;  
5                 a sound generator coupled to the processing device; and  
6                 a program residing in memory and configured to be run on the  
7 processing device, the program configured to vary the output amplitude of the  
8 sound generator depending on the sound generator frequency.
- 1           2.     The apparatus of claim 1, wherein the sound generator is a  
2 buzzer.
- 1           3.     The apparatus of claim 1, wherein the program references a  
2 look up table including information used to determine the magnitude to vary  
3 the output amplitude of the sound generator.
- 1           4.     The apparatus of claim 1, wherein the sound generator is  
2 incorporated into a handheld computing device.
- 1           5.     The apparatus of claim 1, wherein the sound generator is  
2 incorporated into a personal digital assistant.
- 1           6.     The apparatus of claim 1, wherein the program is configured to  
2 provide a flattened frequency response of the sound generator.
- 1           7.     The apparatus of claim 1, wherein the sound generator is  
2 incorporated into a mobile electronic device.
- 1           8.     A sound generator circuit, comprising:  
2                 a processor;  
3                 a memory coupled to the processor;  
4                 a modulator circuit coupled to the processor;

5 a transistor coupled the modulator circuit;  
6 a sound generator coupled to the transistor; and  
7 a program residing in memory and configured to be run on the  
8 processor, the program configured to vary the output amplitude of the sound  
9 generator depending on the sound generator frequency.

1 9. The sound generator circuit of claim 9, wherein the transistor is  
2 a darlington transistor.

1 10. The sound generator circuit of claim 9, wherein the sound  
2 generator circuit is configured to be used in a personal digital assistant.

1 11. The sound generator circuit of claim 9, wherein the sound  
2 generator circuit is configured to be used with a mobile electronic device.

1 12. The sound generator circuit of claim 9, wherein the sound  
2 generator is a buzzer.

1 13. The sound generator circuit of claim 9, wherein the sound  
2 generator is a Bujeon sound generator.

1 14. The sound generator circuit of claim 9, wherein the sound  
2 generator is a Citizen sound generator.

1 15. A method of improving sound quality for a sound generator,  
2 comprising:  
3 providing a signal indicative of a sound frequency to be  
4 generated;  
5 accessing a look up table according to the sound frequency  
6 to be generated to obtain volume adjustment information;  
7 providing the current volume setting; and  
8 adjusting the volume based on the volume adjustment  
9 information.

1           16.    The method of claim 15, further comprising:  
2                    scaling the volume adjustment information based on the  
3   current volume setting to obtain a scaled volume adjustment.

1           17.    The method of claim 16, further comprising:  
2                    subtracting the scaled volume adjustment from the current  
3   volume setting to obtain a desired volume setting.

1           18.    The method of claim 17 further comprising:  
2                    setting the volume to the desired volume setting.

1           19.    The method of claim 18 further comprising:  
2                    generating a sound at the sound frequency to be generated.

1           20.    A method of improving sound quality for a sound generator,  
2   comprising:  
3                    providing a signal indicative of a sound frequency to be  
4   generated;  
5                    calculating volume adjustment information according to the  
6   sound frequency to be generated;  
7                    providing the current volume setting; and  
8                    adjusting the volume based on the volume adjustment  
9   information.